



Attorney Docket No. 57159-8004.US01

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Date: 10-23-06

By: *Jim H*

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	09/916,634	Confirmation No.	:	8462
Applicant	:	Yen, et al.	TC/A.U.	:	2142
Filed	:	July 26, 2001			
Examiner	:	Robert B. Harrell			
Docket No.	:	57159-8004.US01	Customer No.	:	22918

Declaration of Prior Invention Under 37 C.F.R. § 1.131

Commissioner for Patents
P.O. Box 1450
Alexandria, VA

- I. This Declaration establishes invention prior to July 5, 2001.
- II. This Declaration is being made by Wei Yen and John Princen, i.e., the named inventors of the above-identified patent application.

III. Conception:

- A. Prior to July 5, 2001, we conceived of the inventions currently presented in the claims of the above-identified patent application. A list of these claims is attached hereto as Exhibit A.**
- B. Prior to July 5, 2001, we consulted a patent attorney to assist in diligently reducing our inventions to practice. Following our disclosure of the inventions currently presented in the claims of the above-identified patent application, the patent attorney prepared one or more patent application drafts, one of which is attached hereto as Exhibit B. The patent application draft is dated prior to July 6, 2001; the date has been redacted.**
- C. A table provides a rough correlation between the patent application draft and the exemplary independent claim 16. The correlation is for the purpose of example only, and is not intended to limit the scope of any of the claims. The table is attached hereto as Exhibit C.**

IV. Diligence:

- A. We diligently constructively reduced the invention to practice on July 26, 2001.**
- B. Exhibit B includes a draft patent application prepared by our patent attorney prior to July 5, 2001. After the date of the draft patent application, we diligently attempt to reduce the inventions currently presented in the claims of the above-identified application to practice, until July 26, 2001.**
- C. The table of Exhibit C provides a rough correlation between the patent application draft and the exemplary independent claim 16.**

V. We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, (18 U.S.C. ? 001) and that such willful false statements may jeopardize the validity of this application or any patent issued thereon.

Date 10/20/2006

Date 10/20/2006

1-15. (canceled)

16. (previously presented) A method for sending electronic mail, including separating at least one attachment from a text portion in an electronic mail message such that a link is created between said at least one attachment and said text portion;

delivering said at least one attachment at a time other than when said text portion is delivered;

using a non-email transfer protocol to deliver said at least one attachment;

obtaining from a recipient a preferred method for delivery;

making said at least one attachment available from said text portion;

publishing said at least one attachment at a location relatively local to said recipient;

initiating a fetch for said at least one attachment;

fetching said at least one attachment;

presenting said at least one attachment to said recipient; and

scanning said electronic mail automatically on a regular basis for one of said links embedded in said electronic mail message and pre-fetching an associated attachment to be cached at a location relatively local to recipient.

17. (original) The method of claim 16, wherein said publishing occurs at some combination of: (1) a sender gateway, (2) an application service provider, and (3) a recipient gateway.

18. (original) The method of claim 16, wherein said initiating is directed at some combination of: (1) a sender gateway, (2) an application service provider, and (3) a recipient gateway.

19. (previously presented) The method of claim 16, wherein said at least one attachment is located at its cached location and transferred to said recipient.

20. (previously presented) The method of claim 16, wherein said at least one attachment has been predownloaded to said recipient.

21. (original) The method of claim 16, wherein said scanning is performed by some combination of: (1) a sender gateway, (2) an application service provider, and (3) a recipient gateway.

22-36. (canceled)

37. (previously presented) An apparatus for sending electronic mail, including means for separating at least one attachment from a text portion in an electronic mail message such that a link is created between said at least one attachment and said text portion;

means for delivering said at least one attachment at a time other than when said text portion is delivered;

means for using a non-email transfer protocol to deliver said at least one attachment;

means for obtaining from a recipient a preferred method for delivery;

means for making said at least one attachment available from said text portion;

means for publishing said at least one attachment at a location relatively local to said recipient;

means for initiating a fetch for said at least one attachment;

means for fetching said at least one attachment;

means for presenting said at least one attachment to said recipient; and

means for scanning said electronic mail automatically on a regular basis for one of said links embedded in said electronic mail message and means for pre-fetching an associated attachment to be cached at a location relatively local to said recipient.

38. (previously presented) The apparatus of claim 37, wherein said means for publishing occurs at some combination of: (1) a sender gateway, (2) an application service provider, and (3) a recipient gateway.

39. (original) The apparatus of claim 37, wherein said means for initiating is directed at some combination of: (1) a sender gateway, (2) an application service provider, and (3) a recipient gateway.

40. (previously presented) The apparatus of claim 37, wherein said at least one attachment is located at its cached location and transferred to said recipient.

41. (previously presented) The apparatus of claim 37, wherein said at least one attachment has been predownloaded to said recipient.

42. (original) The apparatus of claim 37, wherein said means for scanning is performed by some combination of: (1) a sender gateway, (2) an application service provider, and (3) a recipient gateway.

43. (previously presented) The method of claim 16, wherein said obtaining further includes probing the recipient to ascertain at least one caching location and transferring said at least one attachment using said at least one caching location responsive to said probing.

44. (previously presented) The method of claim 16, wherein said obtaining further includes probing the recipient to ascertain at least one transfer protocol for delivery of said at least one attachment and transferring said at least one attachment using said at least one transfer protocol responsive to said probing.

45. (previously presented) An apparatus for sending electronic mail, including means for separating at least one attachment from a text portion in an electronic mail message such that a link is created between said at least one attachment and said text portion;

means for delivering said at least one attachment at a time other than when said text portion is delivered;

means for using a non-email transfer protocol to deliver said at least one attachment;

means for obtaining from a recipient a preferred method for delivery;

means for making said at least one attachment available from said text portion,

wherein said means for obtaining further includes means for probing the recipient to ascertain at least one caching location and means for transferring said at least one attachment using said at least one caching location responsive to said means for probing.

46. (previously presented) The apparatus of claim 45, wherein said means for obtaining further includes means for probing the recipient to ascertain at least one transfer protocol for delivery of said at least one attachment and means for transferring said at least one attachment using said at least one transfer protocol responsive to said means for probing.

47. (canceled)

48. (previously presented) The method of claim 49, wherein said recipient is selected from the group consisting of a recipient, recipient gateway, and an application service provider.

49. (previously presented) A computer implemented method comprising:
- separating an attachment from an email message;
 - forming a linked email message comprising the email message and a link to the attachment;
 - probing a recipient for a method of delivery;
 - delivering the linked email message;
 - delivering the attachment according to the method of delivery in response to execution of the link in the linked email;
 - caching said attachment at an intermediate location.

This application is filed in the name of the following inventors:

<i>Inventor Name</i>	<i>Citizenship</i>	<i>Residence City and State</i>
Wei YEN	United States	Palo Alto, California
John PRINCEN	United States	Palo Alto, California

The assignee is *RouteFree, Inc.*, a corporation having a place of business at 3400 Hillview Avenue, Building #5, 1st Floor, Palo Alto, California 94304.

TITLE OF THE INVENTION

Asynchronous Out-Of-Band Delivery of Embedded Network Objects

BACKGROUND OF THE INVENTION

1. *Field of the Invention*

This invention relates to delivery of embedded network objects.

2. *Related Art*

In computer communication networks, one method of communication is email ("electronic mail"), in which a sending user prepares and sends a message to a receiving user. Email is well suited to relatively short messages, such as text. However, when the sending user wishes to send a relatively larger amount of information, such as a media document (one example of a media document is a video clip), known email systems are subject to several drawbacks.

A first drawback of known email systems is that a media document can be larger than the maximum size of messages for which the email system is designed. For example, some known email systems are unable to deliver messages longer than about 500 kilobytes in size, while many media documents can be several megabytes in size.

A second drawback of known email systems is that a relatively large media document can take a correspondingly large amount of time (and other resources) to deliver from the sending user to the receiving user. In known email systems, delivery and presentation of the media document to the receiving user is triggered by the receiving user's email client device. The receiving user might therefore be forced to wait a substantial time for the media document to be delivered and be available for presentation. Moreover, if a number of receiving users all attempt to access media documents at substantially the same time, an email server for those receiving users can become overloaded, thus degrading the receiving users' experience further.

Accordingly it would be desirable to have a technique for delivery of embedded network objects, such as for example media documents, that is not subject to drawbacks of the known art.

These advantages and others are provided in an embodiment of the invention, described herein, including a technique in which media documents and other relatively larger documents can be delivered from a sender to a recipient and presented to the recipient with reduced use of time and other resources.

SUMMARY OF THE INVENTION

The invention provides a method and system for delivering relatively large documents (such as for example media documents) with reduced use of time and other resources. Relatively large documents sent by a sender to a recipient in an email message are delivered separately from the email message, asynchronously from delivery of the email message or its presentation to the recipient, and using an out-of-band technique separate from email message delivery. As shown below, this provides for relatively rapid and reliable delivery of the email message, separate reliable delivery of the media document, and presentation of the media document to the recipient without further sending delay.

In a first aspect of the invention, a sender gateway is coupled to the sender. The sender gateway replaces the media document in the email message with a link, and caches that media document for delivery to the recipient using an out-of-band (non-email) technique, such as the FTP or HTTP protocols. The sender gateway delivers the media document to the recipient asynchronously from delivering the email message to the recipient, using one of several possible techniques: (1) scheduling delivery of the media document separately from delivery of the email message, (2) delivering the media document in response to a separate request message from the recipient, or some combination thereof.

In a second aspect of the invention, a recipient gateway is coupled to the recipient. The recipient gateway cooperates with the sender gateway in providing asynchronous, out-of-band delivery of the media document. In cooperation with

the sender gateway, the recipient gateway can receive the media document using an out-of-band technique, such as the FTP or HTTP protocols, and re-associate that media document with the email message. In cooperation with the sender gateway, the recipient gateway can: (1) schedule receipt of the media document separately from receipt of the email message, (2) request delivery of the media document in response to the email message from the sender, (3) cache the media document in anticipation of presenting that media document to the recipient, or some combination thereof.

The invention has general applicability to sending and receiving relatively larger documents (including without limitation, media documents, attached documents, and the like) in association with relatively short messages (including without limitation email, "instant messaging," and the like). There is no particular limitation of the invention specifically to media documents or to email messages, nor is the invention necessarily related to the specific applications disclosed herein.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows a block diagram of a set of possible systems including asynchronous out-of-band delivery of embedded network objects.

Figure 2 shows a process flow diagram of a set of methods including asynchronous out-of-band delivery of embedded network objects.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The invention is described herein with regard to preferred steps and data structures. Those skilled in the art will recognize, after perusal of this application, that the described steps and data structures are not limited to any particular circuits. Rather, those of ordinary skill in the art would be able to implement the described steps and data structures, and equivalents thereof, without undue experimentation or further invention. All such implementations are within the scope and spirit of the invention.

Related Applications

Inventions described herein can be used in conjunction with inventions described in the following documents:

- U.S. Patent Application Serial No. _____, Express Mail Mailing No. _____, filed _____, _____, in the name of the same inventors, attorney docket number 196.1001.01, titled "_____".
- U.S. Patent Application Serial No. _____, Express Mail Mailing No. _____, filed _____, _____, in the name of the same inventors, attorney docket number 196.1002.01, titled "_____".
- U.S. Patent Application Serial No. _____, Express Mail Mailing No. _____, filed _____, _____, in the name of the same inventors, attorney docket number 196.1003.01, titled "_____".
- U.S. Patent Application Serial No. _____, Express Mail Mailing No. _____, filed May _____, 2001 in the name of the same inventors, attorney docket number 196.1005.01, titled "_____".

These documents are hereby incorporated by reference as if fully set forth herein. These documents are referred to as the "incorporated disclosures".

Lexicography

The following terms refer or relate to aspects of the invention as described below. The descriptions of general meanings of these terms are not intended to be limiting, only illustrative.

- xxxxxxxx
- xxxxxxxx

As noted above, these descriptions of general meanings of these terms are not intended to be limiting, only illustrative. Other and further applications of the invention, including extensions of these terms and concepts, would be clear to

1 those of ordinary skill in the art after perusing this application. These other and further applications are part of the scope and
2 spirit of the invention, and would be clear to those of ordinary skill in the art, without further invention or undue experimentation.

3
4 *System Elements*

5
6 Figure 1 shows a block diagram of a set of possible systems including asynchronous out-of-band delivery of
7 embedded network objects.

8
9 xxxxxxxx

10
11 *Method of Operation*

12
13 Figure 2 shows a process flow diagram of a set of methods including asynchronous out-of-band delivery of
14 embedded network objects.

15
16 A method 200 includes a set of flow points and process steps as described herein.

17
18 Although by the nature of textual description, the flow points and process steps are described sequentially,
19 there is no particular requirement that the flow points or process steps must be sequential. Rather, in preferred embodiments of
20 the invention, the described flow points and process steps are performed in a parallel or pipelined manner.

21
22 At a flow point 210, xxxxxxxx

23
24 At a step 211, xxxxxxxx

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26 *Generality of the Invention*

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28 The invention has general applicability to xxxxxxxx

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30 Other and further applications of the invention in its most general form would be clear to those skilled in the
31 art after perusal of this application. The invention would be usable for such other and further applications without undue experi-
32 mentation or further invention.

33
34 Although preferred embodiments are disclosed herein, many variations are possible which remain within the
35 concept, scope and spirit of the invention; these variations would be clear to those skilled in the art after perusal of this applica-
36 tion.

CLAIMS

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2
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[*** Claims to follow. ***]

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2
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ABSTRACT OF THE DISCLOSURE

xxxxxxx

Patent Application Draft (Exhibit B)	Exemplary Claim 16 (Exhibit A)
<p>Relatively large documents sent by a sender to a recipient in an email message are delivered separately from the email message, asynchronously from delivery of the email message or its presentation to the recipient, and using an out-of-band technique separate from email message delivery. (Pg. 1, lines 48-50)</p> <p>Fig. 1 (EMAIL 112)</p> <p>Fig. 2 (step 220)</p>	<p>A method for sending electronic mail, including</p>
<p>Relatively large documents sent by a sender to a recipient in an email message are delivered separately from the email message, asynchronously from delivery of the email message or its presentation to the recipient, and using an out-of-band technique separate from email message delivery. (Pg. 1, lines 48-50)</p> <p>The sender gateway replaces the media document in the email message with a link, and caches that media document for delivery to the recipient using an out-of-band (non-email) technique, such as the FTP or HTTP protocols. (Pg. 1, lines 54-56)</p> <p>Fig. 1 (MEDIA OBJECT 111, EMAIL 112)</p> <p>Fig. 2 (step 220)</p>	<p>separating at least one attachment from a text portion in an electronic mail message such that a link is created between said at least one attachment and said text portion;</p>

Patent Application Draft (Exhibit B)	Exemplary Claim 16 (Exhibit A)
<p>Relatively large documents sent by a sender to a recipient in an email message are delivered separately from the email message, asynchronously from delivery of the email message or its presentation to the recipient, and using an out-of-band technique separate from email message delivery. (Pg. 1, lines 48-50)</p> <p>Fig. 2 (steps 250-270)</p>	<p>delivering said at least one attachment at a time other than when said text portion is delivered;</p>
<p>The sender gateway replaces the media document in the email message with a link, and caches that media document for delivery to the recipient using an out-of-band (non-email) technique, such as the FTP or HTTP protocols. (Pg. 1, lines 54-56)</p> <p>Fig. 2 (step 250)</p>	<p>using a non-email transfer protocol to deliver said at least one attachment;</p>
<p>FIG. 1 (PROBE QUERIES 113, PROBE REPLIES 151)</p>	<p>obtaining from a recipient a preferred method for delivery;</p>
<p>The sender gateway replaces the media document in the email message with a link, and caches that media document for delivery to the recipient using an out-of-band (non-email) technique, such as the FTP or HTTP protocols. (Pg. 1, lines 54-56)</p> <p>Fig. 2 (step 250)</p>	<p>making said at least one attachment available from said text portion;</p>

Patent Application Draft (Exhibit B)	Exemplary Claim 16 (Exhibit A)
<p>In cooperation with the sender gateway, the recipient gateway can: (1) schedule receipt of the media document separately from receipt of the email message, (2) request delivery of the media document in response to the email message from the sender, (3) cache the media document in anticipation of presenting that media document to the recipient, or some combination thereof. (Pg. 2, lines 2-5)</p> <p>Fig. 2 (step 280)</p>	<p>publishing said at least one attachment at a location relatively local to said recipient;</p>
<p>In cooperation with the sender gateway, the recipient gateway can: (1) schedule receipt of the media document separately from receipt of the email message, (2) request delivery of the media document in response to the email message from the sender, (3) cache the media document in anticipation of presenting that media document to the recipient, or some combination thereof. (Pg. 2, lines 2-5)</p>	<p>initiating a fetch for said at least one attachment;</p>
<p>The recipient gateway cooperates with the sender gateway in providing asynchronous, out-of-band delivery of the media document. (Pg. 1, lines 61-62)</p>	<p>fetching said at least one attachment;</p>
<p>The recipient gateway cooperates with the sender gateway in providing asynchronous, out-of-band delivery of the media document. (Pg. 1, lines 61-62)</p> <p>Fig. 2 (step 280)</p>	<p>presenting said at least one attachment to said recipient; and</p>

Patent Application Draft (Exhibit B)	Exemplary Claim 16 (Exhibit A)
<p>In cooperation with the sender gateway, the recipient gateway can: (1) schedule receipt of the media document separately from receipt of the email message, (2) request delivery of the media document in response to the email message from the sender, (3) cache the media document in anticipation of presenting that media document to the recipient, or some combination thereof. (Pg. 2, lines 2-5)</p>	<p>scanning said electronic mail automatically on a regular basis for one of said links embedded in said electronic mail message and pre-fetching an associated attachment to be cached at a location relatively local to recipient.</p>